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CMPS 134 Fall 2023
Quiz on Prog. Assg. #4                    Name_____
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Recall from Programming Assignment #4 that one common way to represent a sequence of related values is by using a **field-terminated string**, or FTS. Such a string is composed of substrings referred to as **fields**, each of which is immediately followed by a **terminator** character. Each field represents some meaningful piece of data. For example, some FTS's (in which the semicolon plays the role of the terminator) describing U.S. presidents are as follows:

```
Jimmy Carter;GA;Democrat;1977-1981;
Ronald Reagan;CA;Republican;1981-1989;
George H.W. Bush;TX;Republican;1989-1993;
Bill Clinton;AR;Demomcrat;1993-2001;
```

For these FTS's, it is to be understood that the 0th through 3rd fields represent, respectively, the president's name, home state, political party, and range of years during which they were in office.

For this quiz, you are to assume the existence of the methods `numberOfFields()`, `getField()`, and `insertField()`, as described on the next page. Your task is to develop a method that, given an FTS, produces a new FTS that contains the same fields as the given one, but in reverse order. Its specification is also on the next page. You are also to assume that the semicolon is being used as the terminator.

Hint: A good solution would almost certainly make use of the `numberOfFields()` and `getField()` methods. Using `insertField()` is recommended, but one can imagine a good solution that does not use it and instead employs the concatenation operator. In any case, clearly a loop is necessary.

You are to assume the existence of correct versions of the following methods:

```
/* Given an FTS, returns the # of fields in it.
Example: The FTS "abc;defghi;jk;" has three fields.
*/
public static int numberOfFields(String fts) { ... }

/* Given an FTS and an integer i, returns the i-th field of that FTS.
** Example: Field #2 in "abc;defghi;jk;" is "jk".
*/
public static String getField(String fts, int i) { ... }

/* Given an FTS, an integer i, and a "new field", returns a new FTS
** that is obtained from the given one by inserting the new field
** at the specified place (making it the i-th field in the new FTS).
** Example: Inserting "glorp" into "abc;defghi;jk;" to make it the 1st
** field yields the FTS "abc;glorp;defghi;jk;"
*/
public static String insertField(String fts, int i, String newField) {
    ...
}
```

Your are to supply the missing body of the following method:

```
/* Given an FTS, returns a new FTS that has the same fields as the
** given one, but in reverse order.  For example, if the given FTS
** were "John Tyler;VA;Whig;1841-1845;", the returned one would be
** "1841-1845;Whig;VA;John Tyler;"
*/
public static String reverseOf(String fts) {
```